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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/644,204	LUND, MARTIN	
	Examiner	Art Unit	
	ALEXANDER BOAKYE	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,11-13,15-24,27-29 and 31-34* is/are rejected.

7)☒ Claim(s) *9,10,14,25,26 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/18/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, 12-13, 15-17, 22-23, 28-29, 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Cryford (US Patent # 5,673,254).

Regarding claims 1, 6, Crayford teaches a method of providing word-level flow control in a communication system (Fig. 7), using a secondary communication channel (420) comprising : establishing a bi-directional communications link (Fiber Optical Line of Fig. 7) between a first system (415_1-415_3/405, Fig.7) and a second system (415_4-415_5/410, Fig.7), transmitting a frame of data from the first system to s second system (column 6, lines 31-32) ; and suspending the transmission of the frame of data without waiting for the end of the frame when the first system receives a stop transmission request embedded in a secondary communication channel

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between the second system and the first system (column 6, lines 30-45 and column 14, lines 51-59).

Regarding claim 12,Crayford further teaches that communication link has at least two lines (Fiber Optic Line has at least two lanes).

Regarding claim 13, Cryford further teaches that the communication link has four lanes (the claimed communication link with four lanes is inherent in the Fiber Optic Line).

Regarding claim 15, Cryford further teaches that the communication link conducts flow control without using a special flow control message that is not contained within normal data frames (column 6,lines 30-45).

Regarding claim 16, is met as previously discussed with respect to claim 1 above.

Regarding claims 17, 23, Crayford teaches a method of providing flow control in a communication system comprising (Fig. 7): establishing a bi-directional communication link (420) with a remote system ; and embedding flow control data in a secondary communication channel of the communication link (column 14, lines 51-59; 420 of Fig 7) for use by a primary communication channel of the communication link (communication link between collision domain and switch 405 of Fig. 7 corresponds to the claimed primary channel).

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Claim 22 is met as previously discussed with respect to claim 1.

Claim 28 is met as previously discussed with respect to claim 12.

Claim 29 is met as previously discussed with respect to claim 13.

Claim 31 is met as previously discussed with respect to claim 15.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-5, 7-8, 11, 18-21, 24, 27, 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crayford (US Patent # 5,67,3,254) in view of Kryzak et al. (US Patent # 6,700,510).

Regarding claim 2, Crayford teaches all the claimed limitations as previously discussed with respect to claim 1 above but fails to explicitly teach that the word level command is based on reversed running disparity coding. However, Kryzak discloses that the word level command is based on reversed running disparity coding (column 6, lines 29-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

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made to incorporate the teachings of Kryzak into the system of Crayford in order to reduce delay.

Regarding claim 3, Crayford teaches all the claimed limitations as previously discussed with respect to claim 1 above but fails to explicitly teach that the word level command is constructed from a series of alternatively coded words. However, Kryzak discloses that the word level command is constructed from a series of alternatively coded words (Fig. 5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Kryzak into the system of Crayford in order to improve system performance.

Regarding claim 4, Crayford teaches all the claimed limitations as previously discussed with respect to claim 1 above but fails to explicitly teach that the secondary communication channel comprises start and stop packet codes. However, Kryzak discloses that the secondary communication channel comprises start and stop packet codes (column 7, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Kryzak into the system of Crayford in order to improve network performance.

Claims 5, 21 are met as previously discussed with respect to claim 4.

Claim 7 is met as previously discussed with respect to claim 1.

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Regarding claims 8, 24, Crayford teaches all the claimed limitations as previously discussed with respect to claim 1 above but fails to explicitly teach resumining transmission of the frame with the next word following the receipt of a start transmission code embedded in the secondary communication channel. However, Kryzak discloses resumining transmission of the frame with the next word following the receipt of a start transmission code embedded in the secondary communication channel (column 7, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Kryzak into the system of Crayford in order to improve network performance.

Regarding claims 11, 27, Crayford teaches all the claimed limitations as previously discussed with respect to claim 1 and 8 above but explicitly fails to teach that the secondary communication channel comprises multiple coded symbols. However, Kryzak discloses that the secondary communication channel comprises multiple coded symbols (see Fig. 6 corresponds to the claimed multiple coded symbols). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Kryzak into the system of Crayford in order to increase bandwidth.

Claim 18 is met as previously discussed with respect to claim 2 .

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Claim 19 is met as previously discussed with respect to claim 3.

Claim 20 is met as previously discussed with respect to claim 4.

Regarding claim 32, Crayford teaches a system providing word-level flow control comprising (Fig. 5): a controller (110) operably coupled to a full-duplex communication link (M11 of Fig. 5); wherein the secondary communication channel includes a word level coding, and the system stops transmission of data without waiting for the end of the packet in response to word level commands received on the secondary communication channel (column 6, lines 30-45 and column 14, lines 51-59).

Crayford differs from the claimed invention in that Crayford does not explicitly disclose wherein the controller includes an encoder that encodes a secondary channel, and a decoder that decodes a received communication channel. However, Kryzak discloses controller includes an encoder that encodes a secondary channel, and a decoder that decodes a received communication channel (column 3, lines 28-30 and column 4, lines 12-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Kryzak into the system of Crayford in order to reconstruct the original information.

Claim 33 is met as previously discussed with respect to claim 2.

Claim 34 is met as previously discussed with respect to claim 3.

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Allowable Subject Matter

3. Claims 9-10, 14, 25-26, 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Ljungberg et al. (US Patent # 5,493,566) discloses Flow control system for packet switches.

Erimli (US Patent # 6,980,520) discloses method and Apparatus for performing source-based flow control across multiple network devices

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Boakye whose telephone number is (571) 272-3183. The examiner can normally be reached on M-F from 8:30am to 6:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham, can be reached on (571) 272-3179. The Fax number is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Electronic Business Center (EBC)** numbers at 866-217-9197 and 703-305-3028.

Alexander Boakye

Patent Examiner

Alexander Boakye

4/28/07

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